CHRISTIE

DS+305/405/655 & HD405 RS232 Codes Technical Reference Information

Table of Contents

Table of Contents 2

Setting up LAN communication 3

Connecting to the projector 3

Setting up RS232 communication 4

- Connect to the projector 4
- RS232 Communication parameters 4

Communication Protocol 5

- Overview 5
- Message body 5
- Mnemonic 5
- Modifiers 5
- Acknowledge/Response 6
- Examples 6

Value tables 14

Setting up LAN communication

The projector is shipped with a set of default settings, these are as follows:

Description	Value
DHCP	On
IP address	0.0.0.0
Subnet mask	0.0.0.0
Default gateway	0.0.0.0
TCP/UDP port	1025
Username	admin
Password	admin

Before you connect the projector to your LAN make sure that the IP settings are set correct according to your LAN configuration.

IP settings can be changed from menu system or from the projector webpage. It can be set automatically by using DHCP (Dynamic Host Configuration Protocol) or manually by disabling DHCP and set IP address, Subnet mask and Gateway.

Use of DHCP requires a DHCP server in the network.

When enabling DHCP please allow up to a minute for the projector to receive IP settings from the DHCP server. The IP address will be updated and shown in the menu system.

Connecting to the projector

You have two options regarding how to make the physical connection to the projector. You can either use a crossover twisted pair (TP) cable directly from the computer to the projector, or two straight-through TP cables with a HUB or a switch between them.

When the projector is set up with proper IP settings, you should be able to control it.

To verify the communication you can connect to the projector webpage. This is done by starting up an internet browser, like Internet Explorer, Opera, Firefox or similar. Then type the projectors IP address (found in the projector network menu) in the address bar.

You will then see a login screen, see Figure 1.

Connect to 192.168.13.91
The server 192.168.13.91 at Network Config requires a username and password.
Warning: This server is requesting that your username and password be sent in an insecure manner (basic authentication without a secure connection).
User name:
admin
Password:
Remember my password
OK
Cancel

Figure 1 : Login

Type in the projectors default login name (admin) and password (admin), both are case sensitive. If both are correct, you will se a configuration website, see Figure 2.

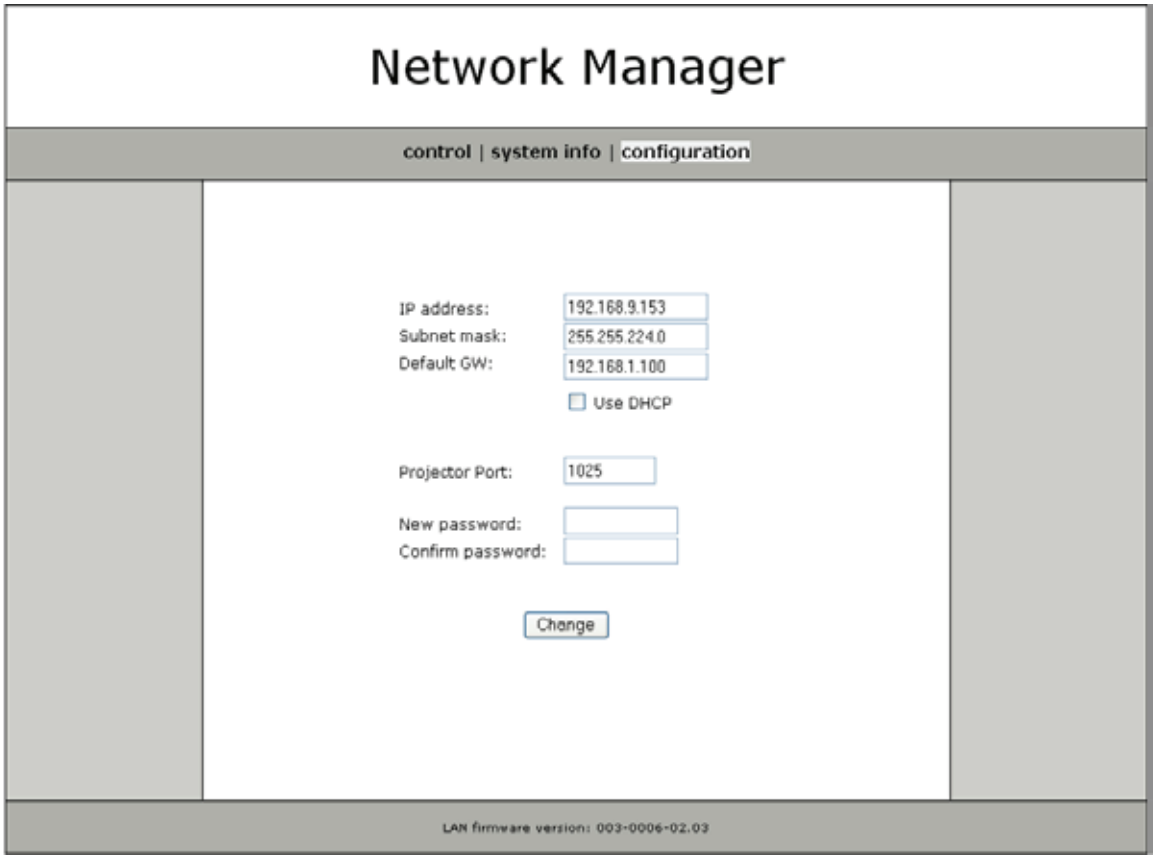

Figure 2 : Web page

On this page you can setup the projectors IP address, subnet mask, default gateway, projector port (TCP/UDP) and password. This page also displays the current version of network firmware the projector is running.

Setting up RS232 communication

Connect to the projector

Connect the projector and host using a standard serial cable with 9-pin female to the host, and 9-pin male to the projector. Pin 2 connects to pin 2, pin 3 connects to pin 3 and pin 5 connects to pin 5.

RS232 Communication parameters

Table 1 shows supported rs232 settings:

Parameter	Data
Baud rate	4800, 9600, 19200
Parity	N
Databits	8
Stopbits	1
Flowcontrol	None

Table 1: RS232 parameters

Baud rate is configurable from the projector's menu system. Default baud rate is 19200.

Communication Protocol

This section describes how to use the communication protocol to control projectors remotely.

When the projects are connected to either RS232 or LAN you can control the projectors through this ASCII based protocol.

Note: Some commands will generate OSD feedback. This can be turned off from the projector's menu system or by setting "OSDC" to value 0 (OSD off) or value 1 (OSD show only warnings).

Overview

The protocol has the following definition:

HEADER	SEPARATOR	ADDRESS	SEPARATOR	MESSAGE BODY	TERMINATOR
1 byte	1 byte	1 -3 bytes	1 byte	N bytes	1 byte

Field	Description	Comment
Header	ASCII character ':'	Required
Separator	ASCII character 'space'	Optional
Address	1 – 3 bytes address	Optional
Terminator	CR carriage return (0x0D)	Required

Message body

The message body structure is as follows:

MNEMONIC	SEPARATOR]	MODIFIER	SEPARATOR	VALUES
1 byte	1 byte	1 -3 bytes	1 byte	N bytes

Field	Description	Comment
Mnemonic	4 bytes key identifier, not case sensitive	Required
Modifer	Single char symbol	Optional
VALUES	1 – 3 bytes address	Optional
Separator	ASCII character 'space'	Optional

Mnemonic

The Mnemonic is 4 bytes key identifier, know as the ASCII command.

Example: POWR, SABS, IVGA

Modifiers

R	Relative change. Value given will be reletive to the existing value.
	Example: :BRIG R10 will increase brightness with 10 steps
A	Request acknowledges. This modifier is the only
	used to read back the result of the command.
	Default all commands send acknowledges so this will not be necessary.
?	Get current value
?M	Get maximum value
?N	Get minimum value
?D	Get default value
?S	Get default step value

Acknowledge/Response

Acknowledge is optional and ON by default. Auto acknowledge can be turned on and off with ECHO commad. It can also be activated on a per command basis using modifier A.

ACK	ADDRESS	SEP	COMMAND	SEP	VALUE	TERM
1 byte	3 bytes	1 byte	4 bytes	1 byte	6 bytes	1 byte

Field	Description	Comment
ACK	ASCII character '%'	Always
SEP	ASCII space	Always
VALUE	6 bytes return value	Always
TERM	Termination char 0x0D (CR)	Always

Most commands value returns the actual value of the requested command. If the requested command is not valid the response may include an error message.

Code	Error message	Description
!00001	Access denied	Current access level is too low
!00002	Not available	Command currently not available.
		Ex. contrast is not available when the projector is searching
!00003	Not implemented	Command to implemented
!00004	Value out of range	Value out of range

Some commands could return a value that is more than 6 characters, for instance strings.

Code	Extended info	Description
e00001	Extended info, string	A description string follows

Example:
> :seri ?
> %001 SERI e00001 07010001

Examples

The protocol accepts one single SPACE between fields, or no SPACE between fields.
'CR' ASCII value carriage return, hex value 0x0D.

SET-commands

SET POWER ON						
:	P	O	W	R	1	'CR'

:POWR1'CR'

ACKNOWLEDGE POWER ON																
%	0	0	1		P	O	W	R		0	0	0	0	0	1	'CR'

%001 POWR 000001'CR'

SET BRIGHTNESS TO 60								
:	B	R	I	G		6	0	'CR'

:BRIG 60'CR'

ACKNOWLEDGE BRIGHTNESS															
%	0	0	1		B	R	I	G		0	0	0	0	6	0	‘CR’

%001 BRIG 000060’CR’

INCREMENT CONTRAST								
:	C	N	T	R		R	1	‘CR’

:CNTR R1’CR’

ACKNOWLEDGE INCREMENT CONTRAST															
%	0	0	1		C	N	T	R		0	0	0	0	6	1	‘CR’

%001 CNTR 000061’CR’

DECREMENT CONTRAST with 2 steps									
:	C	N	T	R		R	-	2	‘CR’

:CNTR R-2’CR’

ACKNOWLEDGE INCREMENT CONTRAST															
%	0	0	1		C	N	T	R		0	0	0	0	5	9	‘CR’

%001 CNTR 000059’CR’

GET-commands

GET current value CONTRAST						
:	C	N	T	R	?	‘CR’

:CNTR?’CR’

ACKNOWLEDGE CONTRAST GET															
%	0	0	1		C	N	T	R		0	0	0	0	5	9	‘CR’

%001 CNTR 000059’CR’

GET minimun value BRIGHTNESS								
:	B	R	I	G		?	N	‘CR’

:BRIG ?N’CR’

ACKNOWLEDGE BRIGHTNESS GET MIN															
%	0	0	1		B	R	I	G		0	0	0	0	0	0	‘CR’

%001 CNTR 000000’CR’

ASCII protocol

Showing all properties for available commands

Command	Description	Platforms*	Operations supported	Comments
POWR	Power	DS+305, DS+405, DS+655, HD405	Get, Set	0 - power off, 1 - power on
POST	Power state	DS+305, DS+405, DS+655, HD405	Get	See value table POST

NOTE: Absence of Projector model under the PLatform column signifies that this feature is not available on any of the models for which this document is intended.

Source selection				
IABS	Set source abs values	DS+305, DS+405, DS+655, HD405	Get, Set	See value table IABS
IVGA	Select VGA	DS+305, DS+405, DS+655, HD405	Get, Set	
ISVI	Select S-video	DS+305, DS+405, DS+655, HD405	Get, Set	
IDVI	Select DVI	DS+305, DS+405, DS+655, HD405	Get, Set	
ICVI	Select Composite video	DS+305, DS+405, DS+655, HD405	Get, Set	
IYPP	Select Component YPbPr	DS+305, DS+405, DS+655, HD405	Get, Set	
IRGS	Select RGB video	DS+305, DS+405, DS+655, HD405	Get, Set	
IHDM	Select HDMI	DS+305, DS+405, DS+655, HD405	Get, Set	
IBNC	Select BNC	DS+405, DS+655, HD405	Get, Set	
ISTS	Signal Status	DS+305, DS+405, DS+655, HD405	Get	0 - searching 1 - locked to source

Picture				
BRIG	Brightness	DS+305, DS+405, DS+655, HD405	Get, Set	
CNTR	Contrast	DS+305, DS+405, DS+655, HD405	Get, Set	
CSAT	Color	DS+305, DS+405, DS+655, HD405	Get, Set	
VHUE	Hue Video	DS+305, DS+405, DS+655, HD405	Get, Set	
SHRP	Sharpness	DS+305, DS+405, DS+655, HD405	Get, Set	
PRST	Picture Reset	DS+305, DS+405, DS+655, HD405	Get, Set	
AUTO	Auto	DS+305, DS+405, DS+655, HD405	Set	
PMUT	Picture Mute	DS+305, DS+405, DS+655, HD405	Get, Set	0 - disable, 1 - enable
FRZE	Freeze Image	DS+305, DS+405, DS+655, HD405	Get, Set	0 - disable, 1 - enable
SABS	Set Scaling abs value		Get, Set	See value table SABS
S1T1	Select Scaling 1:1	DS+305, DS+405, DS+655, HD405	Get, Set	
S169	Select Scaling 16:9	DS+305, DS+405, DS+655, HD405	Get, Set	
SS43	Select Scaling 4:3	DS+305, DS+405, DS+655, HD405	Get, Set	
SFLA	Select Scaling FillAll	DS+305, DS+405, DS+655, HD405	Get, Set	
SFAR	Select Scaling FillAspectRatio	DS+305, DS+405, DS+655, HD405	Get, Set	
SLET	Select Scaling Letterbox to 16:9	GDS+305, DS+405, DS+655, HD405	Get, Set	
SLST	Select Scaling Letterbox St to 16:9	DS+305, DS+405, DS+655, HD405	Get, Set	
GAFI	Select Gamma Film	DS+305, DS+405, DS+655, HD405	Get, Set	1-film 1, 2-film 2
GAVI	Select Gamma Video	DS+305, DS+405, DS+655, HD405	Get, Set	1-video 1, 2-video 2
GACO	Select Gamma Computer	DS+305, DS+405, DS+655, HD405	Get, Set	1-video 1, 2-video 2
GABS	Set Gamma abs value	DS+305, DS+405, DS+655, HD405	Get, Set	See value tab GABS

Picture->RealColor				
BCCR	BrilliantColor Control	DS+305, DS+405, DS+655, HD405	Get, Set	See value table BCCR
BCMO	BrilliantColor Mode	DS+305, DS+405, DS+655, HD405	Get, Set	See value table BCMO
BCPR	BrilliantColor Look	DS+305, DS+405, DS+655, HD405	Get, Set	See value table BCPR
PRES	BrilliantColor Preset Settings		Get, Set	See value table PRES
WPEK	BrilliantColor Boost	DS+305, DS+405, DS+655, HD405	Get, Set	

Command	Description	Platforms*	Operations supported	Comments
CMXV	Color Management X-Coordinate	DS+305, DS+405, DS+655, HD405	Get, Set	
CMYV	Color Management Y-Coordinate	DS+305, DS+405, DS+655, HD405	Get, Set	
CMNA	Color Management Mode Not Corrected	DS+305, DS+405, DS+655, HD405	Get, Set	
CMTE	Color Management Mode Color Temeperature	DS+305, DS+405, DS+655, HD405	Get, Set	
CCXY	Color Management Mode Custom Coordinates	DS+305, DS+405, DS+655, HD405	Get, Set	
CMHS	Color Management Mode HSG		Get, Set	
CMPR	Color Management Mode presets			
RD65	Reset to D65	DS+305, DS+405, DS+655, HD405	Set	
DSCR	Desired Coords Mode	DS+305, DS+405, DS+655, HD405	Get, Set	See value table DSCR
BAGA	Balance Gains Enable	DS+305, DS+405, DS+655, HD405	Get, Set	0 - disable, 1 - enable
DSRX	Desired Red X	DS+305, DS+405, DS+655, HD405	Get, Set	
DSRY	Desired Red Y	DS+305, DS+405, DS+655, HD405	Get, Set	
DSRG	Desired Red Gain	DS+305, DS+405, DS+655, HD405	Get, Set	
DSGX	Desired Green X	DS+305, DS+405, DS+655, HD405	Get, Set	
DSGY	Desired Green Y	DS+305, DS+405, DS+655, HD405	Get, Set	
DSGG	Desired Green Gain	DS+305, DS+405, DS+655, HD405	Get, Set	
DSBX	Desired Blue X	DS+305, DS+405, DS+655, HD405	Get, Set	
DSBY	Desired Blue Y	DS+305, DS+405, DS+655, HD405	Get, Set	
DSBG	Desired Blue Gain	DS+305, DS+405, DS+655, HD405	Get, Set	
DSCX	Desired Cyan X	DS+305, DS+405, DS+655, HD405	Get, Set	
DSCY	Desired Cyan Y	DS+305, DS+405, DS+655, HD405	Get, Set	
DSCG	Desired Cyan Gain	DS+305, DS+405, DS+655, HD405	Get, Set	
DSMX	Desired Magenta X	DS+305, DS+405, DS+655, HD405	Get, Set	
DSMY	Desired Magenta Y	DS+305, DS+405, DS+655, HD405	Get, Set	
DSMG	Desired Magenta Gain	DS+305, DS+405, DS+655, HD405	Get, Set	
DSYX	Desired Yellow X	DS+305, DS+405, DS+655, HD405	Get, Set	
DSYY	Desired Yellow Y	DS+305, DS+405, DS+655, HD405	Get, Set	
DSYG	Desired Yellow Gain	DS+305, DS+405, DS+655, HD405	Get, Set	
DSWG	Desired White Gain	DS+305, DS+405, DS+655, HD405	Get, Set	
MSRX	Measured Red X	DS+305, DS+405, DS+655, HD405	Get, Set	
MSRY	Measured Red Y	DS+305, DS+405, DS+655, HD405	Get, Set	
MSRL	Measured Red Luminance	DS+305, DS+405, DS+655, HD405	Get, Set	
MSGX	Measured Green X	DS+305, DS+405, DS+655, HD405	Get, Set	
MSGY	Measured Green Y	DS+305, DS+405, DS+655, HD405	Get, Set	
MSGL	Measured Green Luminance	DS+305, DS+405, DS+655, HD405	Get, Set	
MSBX	Measured Blue X	DS+305, DS+405, DS+655, HD405	Get, Set	
MSBY	Measured Blue Y	DS+305, DS+405, DS+655, HD405	Get, Set	
MSBL	Measured Blue Luminance	DS+305, DS+405, DS+655, HD405	Get, Set	
MSWX	Measure White X	DS+305, DS+405, DS+655, HD405	Get, Set	
MSWY	Measure White Y	DS+305, DS+405, DS+655, HD405	Get, Set	
MSWL	Measure White Luminance	DS+305, DS+405, DS+655, HD405	Get, Set	
CMHR	ColorMangement Hue Red		Get, Set	
CMHG	ColorMangement Hue Green		Get, Set	
CMHB	ColorMangement Hue Blue		Get, Set	
CMHC	ColorMangement Hue Cyan		Get, Set	
CMHM	ColorMangement Hue Magenta		Get, Set	
CMHY	ColorMangement Hue Yellow		Get, Set	
CMSR	ColorMangement Saturation Red		Get, Set	
CMSG	ColorMangement Saturation Green		Get, Set	

Command	Description	Platforms*	Operations supported	Comments
CMSB	ColorMangement Saturation Blue		Get, Set	
CMSC	ColorMangement Saturation Cyan		Get, Set	
CMSM	ColorMangement Saturation Magenta		Get, Set	
CMSY	ColorMangement Saturation Yellow		Get, Set	
CMGR	ColorMangement Gain Red		Get, Set	
CMGG	ColorMangement Gain Green		Get, Set	
CMGB	ColorMangement Gain Blue		Get, Set	
CMGC	ColorMangement Gain Cyan		Get, Set	
CMGM	ColorMangement Gain Magenta		Get, Set	
CMGY	ColorMangement Gain Yellow		Get, Set	
CMWR	ColorMangement White Balance Red		Get, Set	
CMWG	ColorMangement White Balance Green		Get, Set	
CMWB	ColorMangement White Balance Blue		Get, Set	
Picture->RealColor->Display Customization				
BRED	Red Offset	DS+305, DS+405, DS+655, HD405	Get, Set	
BGRE	Green Offset	DS+305, DS+405, DS+655, HD405	Get, Set	
BBLU	Blue Offset	DS+305, DS+405, DS+655, HD405	Get, Set	
CRED	Red Gain	DS+305, DS+405, DS+655, HD405	Get, Set	
CGRE	Green Gain	DS+305, DS+405, DS+655, HD405	Get, Set	
CBLU	Blue Gain	DS+305, DS+405, DS+655, HD405	Get, Set	

Picture->Advanced				
VPOS	Vertical Position	DS+305, DS+405, DS+655, HD405	Get, Set	
HPOS	Horizontal Position	DS+305, DS+405, DS+655, HD405	Get, Set	
PHSE	Phase	DS+305, DS+405, DS+655, HD405	Get, Set	
FREQ	Frequency	DS+305, DS+405, DS+655, HD405	Get, Set	
NIRE	IRE Setup	DS+305, DS+405, DS+655, HD405	Get, Set	
DLSP	Digital Level and Colorspace	DS+305, DS+405, DS+655, HD405	Get, Set	0 - manual, 1 - auto
DVST	Digital Level	DS+305, DS+405, DS+655, HD405	Get, Set	0 - computer, 1 - video
DCSP	Digital Color Space	DS+305, DS+405, DS+655, HD405	Get, Set	See value tab DCPS

Picture->Advanced ->Source Correction				
AORD	AD Red Offset	DS+305, DS+405, DS+655, HD405	Get, Set	
AOGR	AD Green Offset	DS+305, DS+405, DS+655, HD405	Get, Set	
AOBL	AD Blue Offset	DS+305, DS+405, DS+655, HD405	Get, Set	
AGRD	AD Red Gain	DS+305, DS+405, DS+655, HD405	Get, Set	
AGGR	AD Green Gain	DS+305, DS+405, DS+655, HD405	Get, Set	
AGBL	AD Blue Gain	DS+305, DS+405, DS+655, HD405	Get, Set	
ACAL	AD calibration	DS+305, DS+405, DS+655, HD405	Set	

Picture->Enhancements				
DLTI	DLTI Level	DS+305, DS+405, DS+655, HD405	Get, Set	
DCTI	DCTI Level	DS+305, DS+405, DS+655, HD405	Get, Set	

Command	Description	Platforms*	Operations supported	Comments
CB3D	3D Comb Filter	DS+305, DS+405, DS+655, HD405	Get, Set	
PK2D	2D Peaking	DS+305, DS+405, DS+655, HD405	Get, Set	
ANOI	Adaptive Noise Reduction	DS+305, DS+405, DS+655, HD405	Get, Set	
CEHR	CEH Red	DS+305, DS+405, DS+655, HD405	Get, Set	
CEHB	CEH Blue	DS+305, DS+405, DS+655, HD405	Get, Set	
CEHG	CEH Green	DS+305, DS+405, DS+655, HD405	Get, Set	
CEHY	CEH Yellow	DS+305, DS+405, DS+655, HD405	Get, Set	
CEHF	CEH Fleshtone	DS+305, DS+405, DS+655, HD405	Get, Set	
DYNC	Dynamic Contrast Enable	DS+305, DS+405, DS+655, HD405	Get, Set	
DYNL	Dynamic Contrast Level	DS+305, DS+405, DS+655, HD405	Get, Set	
HDBL	Horizontal Deblocking	DS+305, DS+405, DS+655, HD405	Get, Set	

Picture->Dynamic Black				
DBEN	Dynamic Black		Get, Set	0 - disable, 1 - enable

Installation				
DESK	Select Orientation Desktop Front	DS+305, DS+405, DS+655, HD405	Get, Set	
CEIL	Select Orientation Ceiling Front	DS+305, DS+405, DS+655, HD405	Get, Set	
RDES	Select Orientation Desktop Rear	DS+305, DS+405, DS+655, HD405	Get, Set	
RCEI	Select Orientation Ceiling Rear	DS+305, DS+405, DS+655, HD405	Get, Set	
ORIE	Select Orientation abs value	DS+305, DS+405, DS+655, HD405	Get, Set	See value table ORIE
SCAN	Source Scan	DS+305, DS+405, DS+655, HD405	Get, Set	0 - disable, 1 - enable
VRGB	RGB video	DS+305, DS+405, DS+655, HD405	Get, Set	0 - disable, 1 - enable
BNCR	BNC colorspace RGB	DS+405, DS+655, HD405	Get, Set	
BNCC	BNC colorspace YPbPr	DS+405, DS+655, HD405	Get, Set	
IR01	IR Enable 1	DS+305, DS+405, DS+655, HD405	Get, Set	0 - disable, 2 - enable
IR02	IR Enable 2	DS+305, DS+405, DS+655, HD405	Get, Set	0 - disable, 2 - enable
IR03	IR Enable 3	DS+405, DS+655, HD405	Get, Set	0 - disable, 2 - enable
WIDE	Wide Setup	DS+305, DS+405, DS+655, HD405	Get, Set	0 - disable, 2 - enable
SVGA	Sync Termination VGA	DS+305, DS+405, DS+655, HD405	Get, Set	0 - disable, 2 - enable
SVG2	Sync Termination VGA 2		Get, Set	0 - disable, 2 - enable
SDVI	Sync Termination DVI-A	DS+305	Get, Set	0 - disable, 2 - enable
SBNC	Sync Termination BNC	DS+405, DS+655, HD405	Get, Set	0 - disable, 2 - enable
OSDC	OSD Enable	DS+305, DS+405, DS+655, HD405	Get, Set	See value table OSDC
TEST	Test Image	DS+305, DS+405, DS+655, HD405	Get, Set	0 - 7 different test patterns
VKEY	Vertical Keystone	DS+305, DS+405, DS+655, HD405	Get, Set	
HKEY	Horizontal Keystone		Get, Set	
SNCL	Sync Level	DS+305, DS+405, DS+655, HD405	Get, Set	Infitec only
CSCV	Enable Color Space Convert	DS+305, DS+405, DS+655, HD405	Get, Set	Infitec only
CSFI	Enable Color Space Convert	DS+305, DS+405, DS+655, HD405	Get, Set	Infitec only
OPFI	Enable Optical Filter	DS+405, DS+655, HD405	Get, Set	Infitec only
VFVE	Video filter VGA enable	DS+405, DS+655, HD405	Get, Set	0 - disable, 1 - enable
VFBE	Video filter BNC enable	DS+405, DS+655, HD405	Get, Set	0 - disable, 1 - enable
OPFA	Optical filter all		Get, Set	0 - disable, 1 - enable

Installation->lamp				
ECOM	Eco Mode	DS+305, DS+405, DS+655, HD405	Get, Set	0 - disable, 1 - enable
LPW1	Lamp1 Power	DS+305, DS+405, DS+655, HD405	Get, Set	
LPW2	Lamp2 Power	DS+405, DS+655, HD405	Get, Set	
LMOD	Lamp Mode	DS+405, DS+655, HD405	Get, Set	See value table LMOD
LDLY	Lamp Auto Switch Delay	DS+405, DS+655, HD405	Get, Set	

Command	Description	Platforms*	Operations supported	Comments
DUAL	Lamp Mode Dual	DS+405, DS+655, HD405	Get, Set	Use LMOD, this is for legacy support
SNGL	Lamp Mode Single	DS+405, DS+655, HD405	Get, Set	Use LMOD, this is for legacy support
LAUT	Lamp Mode Auto	DS+405, DS+655, HD405	Get, Set	Use LMOD, this is for legacy support
LACT	Select Lamp In Single Mode	DS+405, DS+655, HD405	Get, Set	Use LMOD, this is for legacy support

Installation->trigger				
SMOD	Screen Trigger Mode	DS+305, DS+405, DS+655, HD405	Get, Set	See value table SMOD
AMOD	Aspect Trigger Mode	DS+405, DS+655, HD405	Get, Set	See value table AMOD

Settings				
FCRE	Factory Reset	DS+305, DS+405, DS+655, HD405	Set	
PINC	PIN Code	DS+305, DS+405, DS+655, HD405	Set	Must be run in standby
CODE	Service Code	DS+305, DS+405, DS+655, HD405	Set	
RCID	RCID Internal	DS+305, DS+405, DS+655, HD405	Get, Set	
DPMS	DPMS	DS+305, DS+405, DS+655, HD405	Get, Set	0 - disable, 1 - enable
DPMT	DPMS Timeout	DS+305, DS+405, DS+655, HD405	Get, Set	
KEYB	Backlight Timeout	DS+305, DS+405, DS+655, HD405	Get, Set	
MNUT	Menu Timeout	DS+305, DS+405, DS+655, HD405	Get, Set	
BACK	Background color	DS+305, DS+405, DS+655, HD405	Get, Set	
SPLH	Splash	DS+305, DS+405, DS+655, HD405	Get, Set	
BAUD	Baudrate	DS+305, DS+405, DS+655, HD405	Get, Set	See value table BAUD

Settings->Set date and time				
RTCH	Real Time Clock Hour	DS+305, DS+405, DS+655, HD405	Get, Set	
RTCM	Real Time Clock Minute	DS+305, DS+405, DS+655, HD405	Get, Set	
RTCS	Real Time Clock Second	DS+305, DS+405, DS+655, HD405	Get, Set	
RTCD	Real Time Clock Day	DS+305, DS+405, DS+655, HD405	Get, Set	
RTCN	Real Time Clock Month	DS+305, DS+405, DS+655, HD405	Get, Set	
RTCY	Real Time Clock Year	DS+305, DS+405, DS+655, HD405	Get, Set	

Profiles				
UMST	Store User Settings	DS+305, DS+405, DS+655, HD405	Get, Set	
UMRC	Recall User Settings	DS+305, DS+405, DS+655, HD405	Get, Set	
STMO	Store motor position		Set	
RCMO	Recall motor position		Set	

Lens control				
FOIN	Focus In	DS+405, DS+655, HD405	Set	1 - Slow, 2 - Medium, 3 - Fast
FOUT	Focus Out	DS+405, DS+655, HD405	Set	1 - Slow, 2 - Medium, 3 - Fast
ZOIN	Zoom In	DS+405, DS+655, HD405	Set	1 - Slow, 2 - Medium, 3 - Fast
ZOUT	Zoom Out	DS+405, DS+655, HD405	Set	1 - Slow, 2 - Medium, 3 - Fast
IROP	Iris Open	DS+405, DS+655, HD405	Set	1 - Slow, 2 - Medium, 3 - Fast
IRCL	Iris Close	DS+405, DS+655, HD405	Set	1 - Slow, 2 - Medium, 3 - Fast
LSDW	Lens Shift Down	DS+405, DS+655, HD405	Set	1 - Slow, 2 - Medium, 3 - Fast
LSUP	Lens Shift Up	DS+405, DS+655, HD405	Set	1 - Slow, 2 - Medium, 3 - Fast
LSLF	Lens Shift Left	DS+405, DS+655, HD405	Set	1 - Slow, 2 - Medium, 3 - Fast
LSRH	Lens Shift Right	DS+405, DS+655, HD405	Set	1 - Slow, 2 - Medium, 3 - Fast
SHUT	Shutter	DS+405, DS+655, HD405	Set	0 - disable, 1 - enable
ZOPO	Zoom Position		Get, Set	
FOPO	Focus Position		Get, Set	
HOPO	Horizontal Lensshift Position		Get, Set	
VEPO	Vertical Lensshift Position		Get, Set	

Command	Description	Platforms*	Operations supported	Comments
IRPO	Iris Position		Get, Set	
LENS	Lens ID	DS+405, DS+655, HD405	Get	
LMON	Lens Monitoring	DS+405, DS+655, HD405	Get, Set	
Lamp status				
LRM1	Lamp1 Estimated Remaining Lamp Time	DS+305, DS+405, DS+655, HD405	Get	
LTR1	Lamp1 Runtime	DS+305, DS+405, DS+655, HD405	Get	
LHO1	Lamp Channel 1 Total Time	DS+405, DS+655, HD405	Get	
LST1	Lamp1 Status	DS+305, DS+405, DS+655, HD405	Get	See value table LST1 and LST2
LRM2	Lamp2 Estimated Remaining Lamp Time	DS+405, DS+655, HD405	Get	
LTR2	Lamp2 Runtime	DS+405, DS+655, HD405	Get	
LHO2	Lamp Channel 2 Total Time	DS+405, DS+655, HD405	Get	
LST2	Lamp2 Status	DS+405, DS+655, HD405	Get	See value table LST1 and LST2
UTOT	Unit Time Total	DS+305, DS+405, DS+655, HD405	Get	
Menu navigate				
MENU	Menu Navigate Toggle OSD Menu	DS+305, DS+405, DS+655, HD405	Set	
NVUP	Menu Navigate Up	DS+305, DS+405, DS+655, HD405	Set	
NVDW	Menu Navigate Down	DS+305, DS+405, DS+655, HD405	Set	
NVLF	Menu Navigate Left	DS+305, DS+405, DS+655, HD405	Set	
NVRH	Menu Navigate Right	DS+305, DS+405, DS+655, HD405	Set	
NVOK	Menu Navigate Ok	DS+305, DS+405, DS+655, HD405	Set	
Miscellaneous				
ECHO	Communication Response (on/off)	DS+305, DS+405, DS+655, HD405	Set	
Medical				
MDOF	Medical Off	DS+305	Get, Set	medical only
MDCL	Medical Clearbase	DS+305	Get, Set	medical only
MDBL	Medical Bluebase	DS+305	Get, Set	medical only
MDFW	Medical Full White	DS+305	Get, Set	medical only
Thermal				
THRM	Thermal Status	DS+305, DS+405, DS+655, HD405	Get	
FAN1	Fan Speed 1	DS+305, DS+405, DS+655, HD405	Get	
FAN2	Fan Speed 2	DS+305, DS+405, DS+655, HD405	Get	
FAN3	Fan Speed 3	DS+305, DS+405, DS+655, HD405	Get	
FAN4	Fan Speed 4	DS+305, DS+405, DS+655, HD405	Get	
FAN5	Fan Speed 5	DS+305, DS+405, DS+655, HD405	Get	
FAN6	Fan Speed 6	DS+305, DS+405, DS+655, HD405	Get	
FAN7	Fan Speed 7	DS+305, DS+405, DS+655, HD405	Get	
FAN8	Fan Speed 8	DS+305, DS+405, DS+655, HD405	Get	
SNS1	Sensor Value 1	DS+305, DS+405, DS+655, HD405	Get	
SNS2	Sensor Value 2	DS+305, DS+405, DS+655, HD405	Get	
SNS3	Sensor Value 3	DS+305, DS+405, DS+655, HD405	Get	
SNS4	Sensor Value 4	DS+305, DS+405, DS+655, HD405	Get	
SNS5	Sensor Value 5	DS+305, DS+405, DS+655, HD405	Get	
SNS6	Sensor Value 6	DS+305, DS+405, DS+655, HD405	Get	
SNS7	Sensor Value 7	DS+305, DS+405, DS+655, HD405	Get	
SNS8	Sensor Value 8	DS+305, DS+405, DS+655, HD405	Get	

Command	Description	Platforms*	Operations supported	Comments
Status				
PLAT	Platform Name String	DS+305, DS+405, DS+655, HD405	Get	Extended Protocol
SERI	Serial Number String	DS+305, DS+405, DS+655, HD405	Get	Extended Protocol
MODL	Model Name String	DS+305, DS+405, DS+655, HD405	Get	Extended Protocol
PART	Part Number String	DS+305, DS+405, DS+655, HD405	Get	Extended Protocol
SVER	Software Version	DS+305, DS+405, DS+655, HD405	Get	Extended Protocol
SWVR	Software Version	DS+305, DS+405, DS+655, HD405	Get	
ACSS	Current Access Level	DS+305, DS+405, DS+655, HD405	Get	
LEST	Status LED state	DS+305, DS+405, DS+655, HD405	Get	See value table LEST
ZoneCorrection				
ZCEN	ZoneCorrection Enable		Get, Set	0 - disable, 1 - enable
3D stereo				
TDFS	3D Flash slave		Set	
TDGT	Glass type		Get, Set	
TDGD	Genlock phase delay		Get, Set	
TDSM	Stereo mode		Get, Set	
TDSC	Connector select slave		Get, Set	

Value tables

IABS Set source abs values	
Value	Description
0	VGA
0	VGA1
1	BNC
1	VGA2
2	DVI
4	S-Video
5	Composite Video
6	Component Video
7	RGBs Video
8	HDMI

SABS Set scaling abs values	
Value	Description
0	1:1
1	Fill All
2	Fill Aspect Ratio
3	Fill 16:9
4	Fill 4:3
9	Fill Letterbox to 16:9
10	Fill Letterbox st to 16:9

LST1 and LST2 Lamp status Value	Description
0	Broken
1	Warming up
2	Lamp is on
3	Lamp is off
4	Lamp is cooling down
5	Lamp is not present

GABS Set Gamma abs value Value	Description
0	Film 1
1	Film 2
2	Video 1
3	Video 2
7	Computer 1
8	Computer 2

DSCR Desired Coords Mode Value	Description
0	Off
1	RGB
2	RGBCMY
ORIE Select Orientation abs value Value	Description
0	Desktop front
1	Ceiling rear
2	Desktop rear
3	Ceiling front

OSDC OSD Enable Value	Description
0	OSD off
1	OSD show only warnings
2	OSD on

LMOD Lamp Mode Value	Description
0	Single lamp 1
1	Single lamp 2
2	Dual lamps
3	Auto lamp switch

BCCR BrilliantColor Control Value	Description
0	Off
1	Computer balanced
2	Video balanced
3	Computer native
4	Video native

BCPR BrilliantColor Preset Value	Description
0	Off
1	On
1	Native
2	Balanced

BCMO BrilliantColor Mode Value	Description
0	Computer
1	Video

PRES BrilliantColor Preset Settings Value	Description
0	SMPTE HD
1	SMPTE C
2	EBU
POST Power state Value 0	Description Deep sleep
1	Off
2	Powering up
3	On
4	Powering down
5	Critical powering down
6	Critical off

BAUD Baud rate Value	Description
0	4800
1	9600
2	19200
	Ceiling front

LEST Status LED state Value	Description
0	Green/Blue On
1	Green/Blue Flash
2	Yellow On
3	Yellow Flash
4	Red On
5	Red Flash

SMOD Screen trigger Value	Description
0	Auto
1	On
2	Off

AMOD Aspect trigger Value	Description
0	Auto
1	On
2	Off

DCSP Digital colorspace Value	Description
0	RGB
1	YPbPr 709
2	YpbPr 601

ZCST ZoneCorrection Adjustment Selection Value	Description
0	Iris Open, Black
1	Iris Closed, Black
2	Iris Open, White
3	Iris Closed, White